Supporting Information

A Nanomechanical Study on Deciphering the Stickiness of SARS-CoV-2 on Inanimate Surfaces

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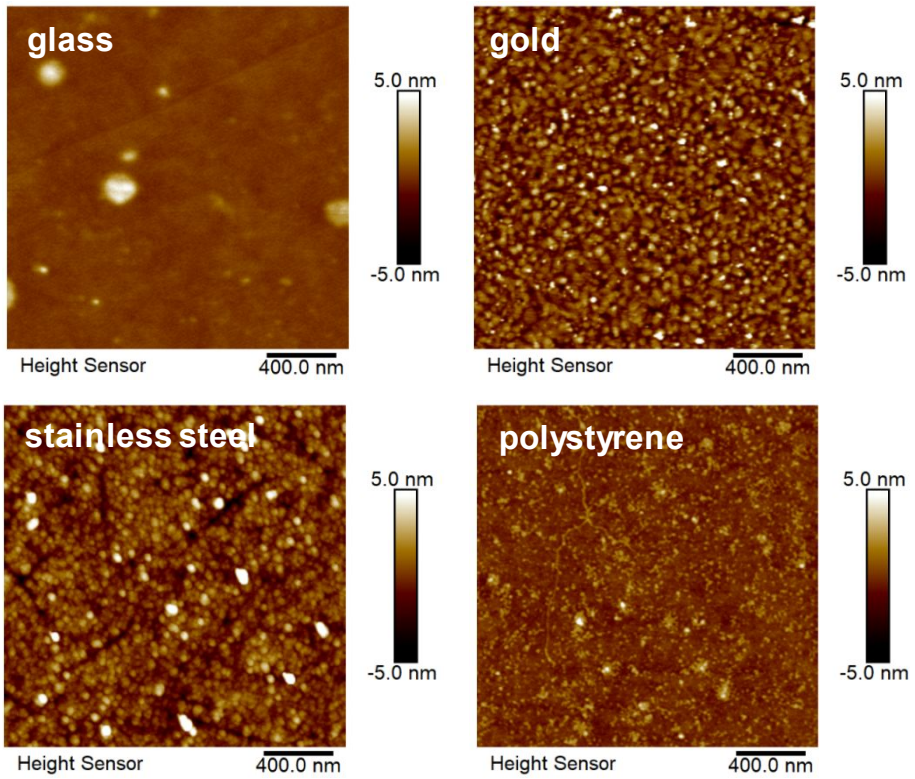

Figure S1. AFM topographic images (2 × 2 μm^2) of glass, gold, stainless steel and polystyrene after the adsorption of spike protein.

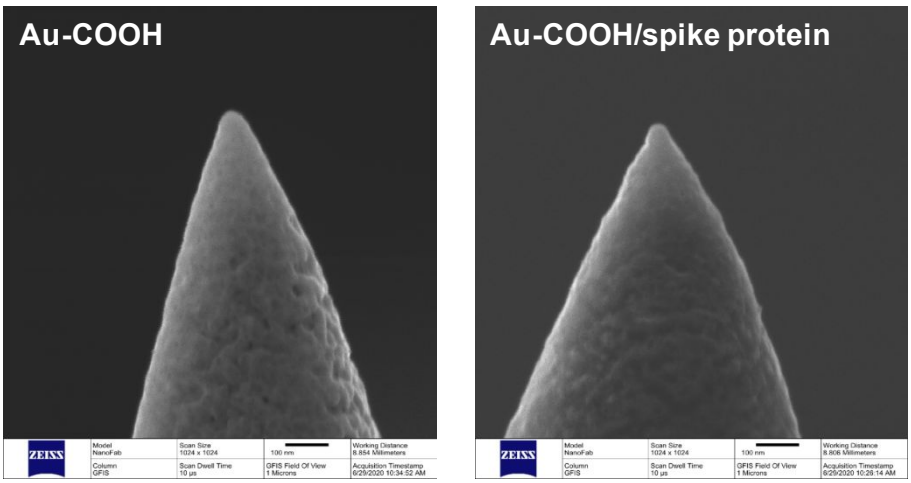

Figure S2. High-resolution helium ion microscopy (HIM) of gold-coated AFM probe functionalized with carboxyl group and spike protein. The radius of the spherical cap of AFM tip functionalized with spike protein is determined to be 25-35 nm.

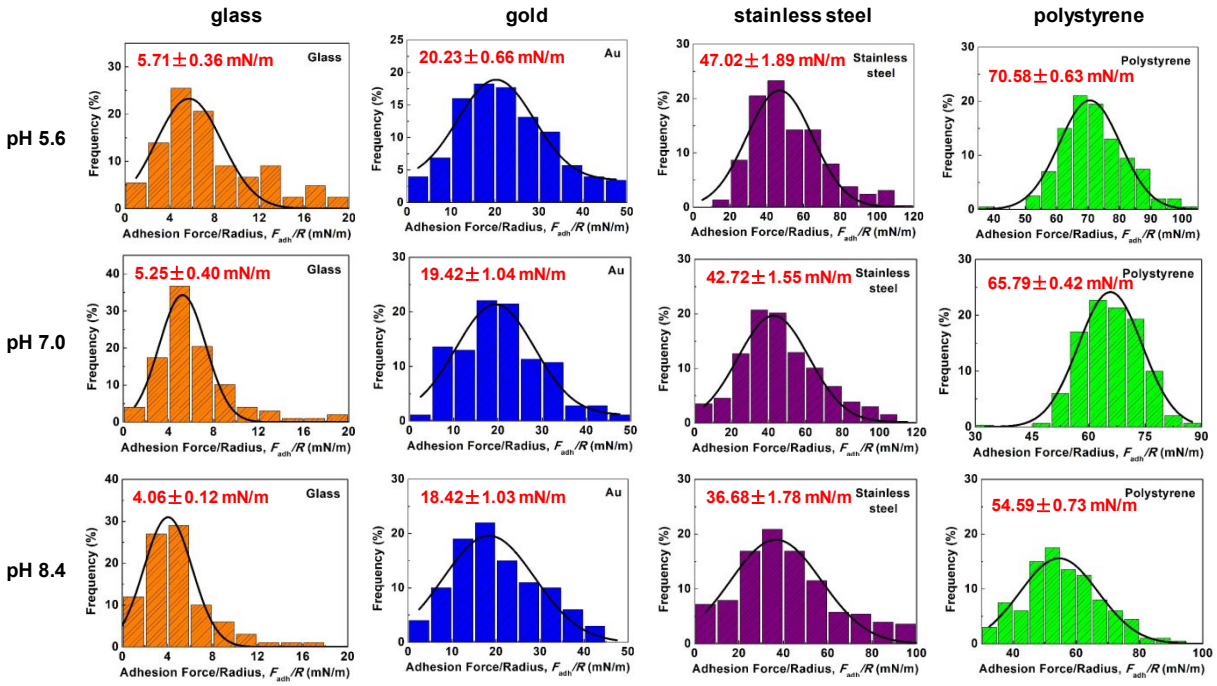

Figure S3. The histogram of normalized adhesion force F_{adh}/R with the fitted Gaussian distribution for the interaction between spike protein functionalized AFM tip and solid surfaces, including glass, gold, stainless steel (SS) and polystyrene (PS), in 10 mM NaCl solution at 25 °C under the effect of pH: 5.6, 7.0 and 8.4.

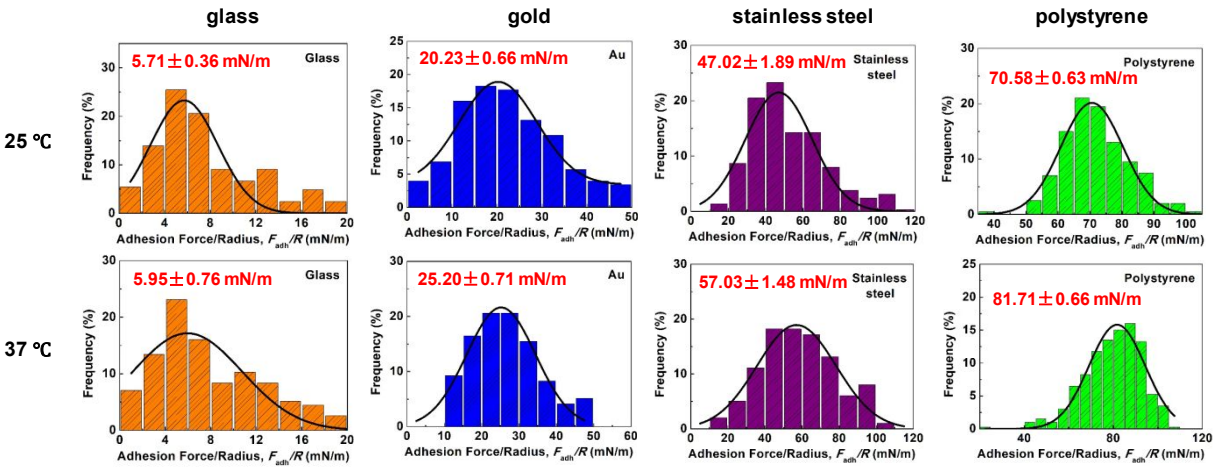

Figure S4. The histogram of normalized adhesion force F_{adh}/R with the fitted Gaussian distribution for the interaction between spike protein functionalized AFM tip and solid surfaces, including glass, gold, stainless steel (SS) and polystyrene (PS), in 10 mM NaCl solution at pH 5.6 under the effect of temperature: 25 °C and 37 °C.

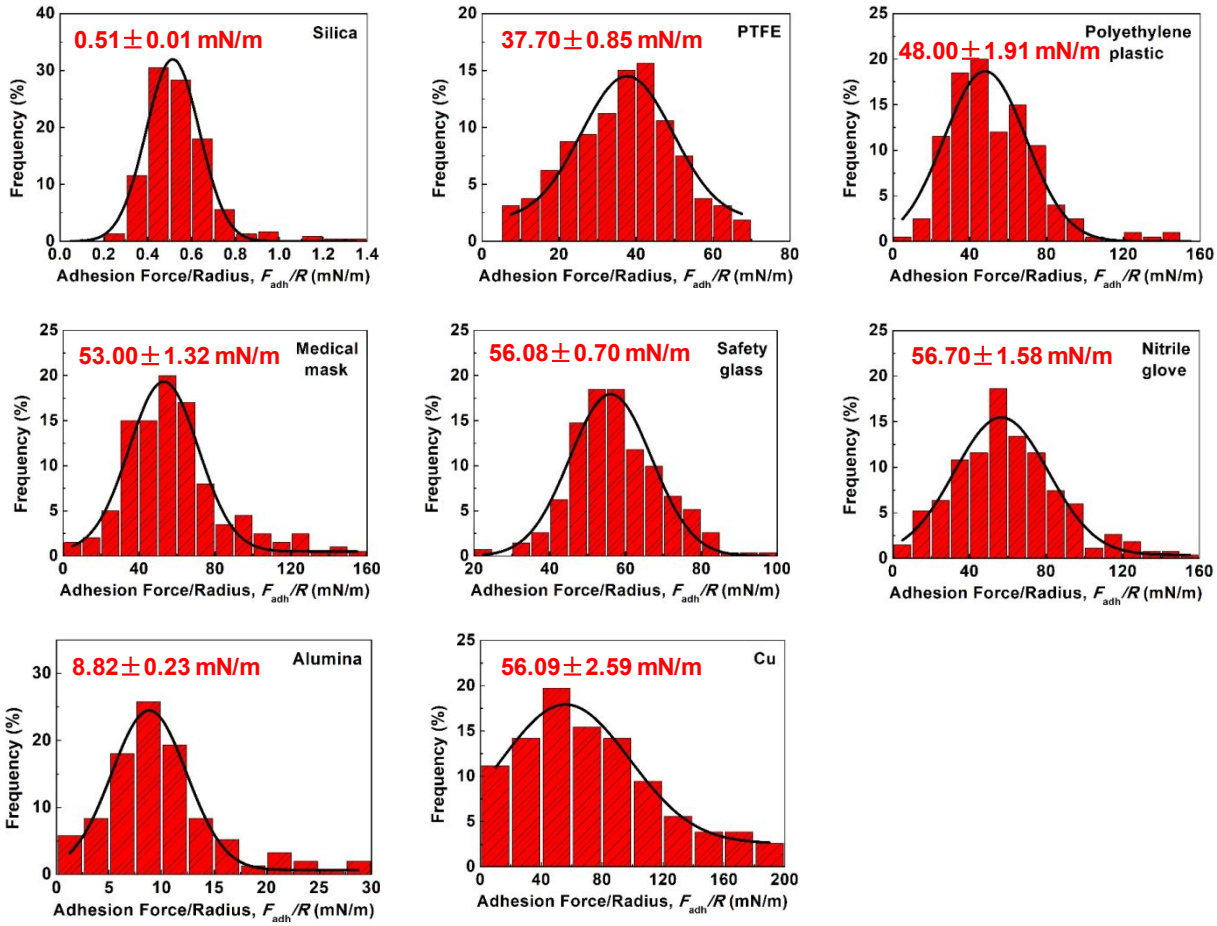

Figure S5. The histogram of normalized adhesion force F_{adh}/R with the fitted Gaussian distribution for the interaction between spike protein functionalized AFM tip and a variety of solid surfaces in 10 mM NaCl solution at pH 5.6 at 25 °C.

Table S1. Zeta potential of spike protein subunit S1

pH	4.0	5.6	7.0	8.4
Zeta potential	20.55±1.55 mV	-1.23±0.26 mV	-17.17±0.83 mV	-30.25±1.86 mV